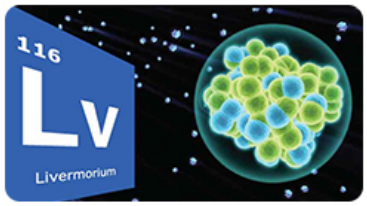
LIVERMORE LAB REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, as reported by the media, May 27-30, 2014. Although reviewed for accuracy, the Lab is not responsible for the media's interpretations.

CBS IT'S HEAVY



Element 116 was named Livermorium in honor of Lawrence Livermore National Laboratory and the city of Livermore.

Only six cities in the world have an element located on the periodic table named after them. And Livermore is the most recent.

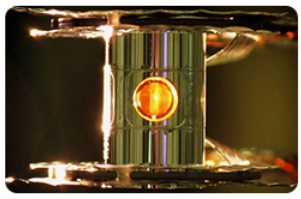
The city of Livermore and Lawrence Livermore got a mention on the Periodic Table of Elements with the discovery of Livermorium. The synthetic super-heavy element was officially accepted in 2011 and recognizes a six-year collaboration between Lawrence Livermore researchers and Russian scientists.

Today (May 30), the city of Livermore will celebrate the first anniversary of Livermorium Day with a program at Mills Square Park that includes a presentation of Alameda County Science and Engineering Fair winners and the unveiling of three Livermorium conceptual artworks. Earlier in the day, Lawrence Livermore scientists also will join Mayor John Marchand to answer questions from high school and middle school students in a live online discussion. The public is invited to watch and contribute to the conversation, beginning at 9:30 a.m. Pacific time, on Twitter by using the #Livermorium hashtag.

To read more, go to *CBS*.

NBC NEWS

BREAK ON THROUGH



A metallic case called a hohlraum holds the fuel capsule for NIF experiments.

Albert Einstein's equation on mass-energy equivalence ($E=mc^2$) suggested that a tiny amount of matter could yield a tremendous amount of energy -- which was demonstrated by the development of nuclear weapons and fission reactors.

In a first-of-its-kind experiment at Lawrence Livermore's National Ignition Facility, the reaction exceeded the amount of energy deposited into the fuel.

Last September, the rapid implosion of a plastic shell into icy isotopes of hydrogen produced fusion at NIF. This wasn't just a run-of-the-mill fusion reaction; it was the first one NIF has ever produced wherein the fuel released more energy than it absorbed.

The Laboratory's 192 lasers have been pumping energy into a succession of tiny fuel pellets since 2010.

To read more, go to *NBC News*.

GCN

A CLUSTER FOR THE MASSES

The Catalyst supercomputer at Lawrence Livermore is now available for collaborative research with industry and academia.

Lawrence Livermore is making its Catalyst supercomputing cluster available to industry, universities and other collaborators to test big data technologies, architectures and applications.

Developed by a partnership of Cray, Intel and Lawrence Livermore, the Cray CS300 high performance cluster is available through Livermore's High Performance Computing Innovation Center (HPCIC).

The increased storage capacity of the system represents a major departure from classic simulation-based computing architectures common at DOE laboratories and opens up new opportunities for exploring the potential of combining floating point focused capability with data analysis in one environment.

To read more, go to *GCN*.

The Fresno Bee HARVESTING CLIMATE CHANGE

Climate change will severely impact crops in California if steps aren't taken to adapt.

Dire consequences face the state's agricultural industry if it does not take steps to adapt to climate change, said a panel of 14 scientists, as well as Gov. Jerry Brown, at a recent conference on climate change.

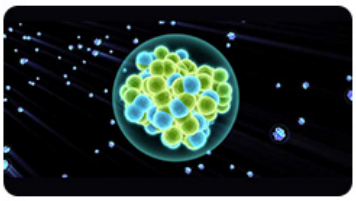
The conference sought to underscore a troubling brew of warmer nighttime temperatures, drying soils, shrinking snowpack and drought are on their way.

Experts who spoke accepted climate change as inevitable, but focused on the need to adapt. Farmers might have to change the type of crops they plant and when they are planted, they said.

"The expected temperature changes for the global mean are between 4.5 and 8.5 degrees by 2100," said Benjamin Santer, an atmospheric scientist from Lawrence Livermore National Laboratory. "That's a very different world. California would be profoundly impacted by that."

To read more, go to *The Fresno Bee*.

livescience ELEMENTAL SCIENCE



Element 117 was first discovered by Lawrence Livermore researchers and Russian collaborators.

Atoms of a new super-heavy element -- the as-yet-unnamed element 117 -- have reportedly been created by scientists in Germany, moving it closer to being officially recognized as part of the standard periodic table.

Researchers at the GSI Helmholtz Center for Heavy Ion Research, an accelerator laboratory located in Darmstadt, Germany, say they have created and observed several atoms of element 117, which is temporarily named ununseptium.

Scientists from Lawrence Livermore and the Joint Institute for Nuclear Research in Dubna, Russia worked with researchers from the Research Institute for Advanced Reactors (Dimitrovgrad), Oak Ridge National Laboratory, Vanderbilt University and the University of Nevada, Las Vegas, to first discover element 117 in 2010.

Since then, researchers have performed subsequent tests to confirm the existence of the elusive new element.

To read more, go to *Live Science*.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The

Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance. To send input to the *Livermore Lab Report*, send e-mail